5 species of *Podozamites* (3 of which are new), and Coniferales (5 species, among them a new *Cupressinoxylon*).

SEWARD,[36] in reporting upon a collection of fossil plants from the Wealden of Sussex, describes new species in *Lycopodites*, *Selaginellites*, *Hausmannia* (Dipteridineae), *Pelletieria* (a new genus of Schizaeaceae), *Teilhardia* (a new genus of ferns of uncertain affinity), *Dichopteris*, *Conites* (cones of uncertain affinity). In a general survey of the Wealden floras, the author concludes that "while there is a very close similarity between the Wealden flora of England and the corresponding floras in Eastern and Western North America, the number of cosmopolitan types is smaller than in the case of the Middle Jurassic floras."—**J. M. C.**

Chondriosomes and myelin forms.—The problem of the chondriosomes, or mitochondria, is approached from a new direction in a short article by LÖWSCHIN[37] who happened to notice the formation of myelin forms[38] from lecithin in a microscopic preparation. These myelin forms bore such a remarkable resemblance to chondriosomes that LÖWSCHIN made a careful examination of myelin forms secured from commercial lecithin. The following are some of the more important results: all the forms characteristic of chondriosomes were obtained and their size varied from structures easily seen with a low-power dry objective to those barely visible under the highest powers. In general, the size depends upon the mass of the material, the fineness of its division, and the chemical and physical characteristics of the surrounding medium; while the form is dependent upon the composition of the bodies, their surface tension, and the nature of the surrounding medium. It is to be noted that the elongated forms are found when there is streaming in the surrounding medium. The myelin forms may appear homogeneous or may show a finer structure, and the outer membrane may be liquid or may have more consistency. In many cases a longitudinal splitting, like that described by LEWITSKY for chondriosomes, was observed. The myelin forms arise, develop, and disappear. They may swell and flow together, forming homogeneous threads (*Chondriokonten*), from which are developed granular threads (*Chondriomiten*), which may then break up into single granules (mitochondria), and these again may form into chains. One can observe directly the formation of diplosomes and their division into two granules. The myelin forms, like chondriosomes, may be fixed by chromic acid, osmic acid, or formalin, but are destroyed by acetic acid.

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[36] SEWARD, A. C., Contribution to our knowledge of Wealden floras. Quart. Jour. Geol. Soc. **69**:85–116. *pls. 11–14.* 1913.

[37] LÖWSCHIN, A. M., Myelinformen und Chondriosomen. Ber. Deutsch. Bot. Gesells. **31**:203–209. 1913.

[38] By "myelin forms" is meant the emulsion forms which, under the action of emulsion-producing substances, form upon fatty acids.

While LÖWSCHIN admits that at present he is describing analogies, still he believes that these are too numerous and too striking to be merely accidental.—CHARLES J. CHAMBERLAIN.

Recent work among gymnosperms.—SAXTON[39] has investigated one of the two species of *Actinostrobus*, an endemic Australian genus, and therefore well worth investigation. An outline of the results is as follows. The microsporophyll bears three sporangia and about three months elapse between pollination and fertilization. The archegonia are numerous and deep-seated, "a group of 25–30 being found abutting on the lower end of each pollen tube, which reaches about halfway down the prothallus," the older cells of which are generally 2-nucleate or 4-nucleate. In proembryo-formation, walls are formed when the two free nuclei divide, so that there is a 4-celled proembryo. The completed proembryo, consisting of few cells, fills the egg. Each cell of the proembryo (with perhaps the exception of the two "apical cells") gives rise to a suspensor and an embryo-initial, being as independent in embryo-formation as are the pro-embryonal cells of *Ephedra*. The chromosome numbers are 8 and 16.

TAKEDA[40] has studied in detail the anatomy of the leaf of *Welwitschia* and concludes that the evidence is all in favor of the Gnetales being gymnosperms, as opposed to the view of LIGNIER and TISON. Even the tracheae, the most striking angiospermous anatomical feature, are in a transition stage, showing incomplete perforations.

TAKEDA[41] has developed a theory of the so-called "transfusion tissue" of gymnosperms. He finds that the "orthodox" transfusion tissue always arises laterally, and is quite independent of centripetal xylem. Therefore, it is not a vestige of the centripetal xylem and is not to be regarded as of phylogenetic significance, its function being "water-storing."—J. M. C.

Gemmae in Radula.—The development of gemmae in two species of *Radula* has been studied by Miss WILLISTON.[42] In *R. flaccida*, a native of tropical America, the gemmae occur on the dorsal margin of the leaves, and formation begins by the enlargement of a single cell around which a transparent gelatinous substance is secreted. A periclinal wall divides the gemma initial into a stalk cell which undergoes no further division, and an outer or mother cell which is divided by an anticlinal wall. The next division gives a quadrant, the two outer cells of which immediately function as apical cells with two cutting faces. The two inner cells of the quadrant do not produce apical cells.

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[39] SAXTON, W. T., Contributions to the life history of *Actinostrobus pyramidalis* Miq. Ann. Botany **27**:321–345. *pls. 25–28*. 1913.

[40] TAKEDA, H., Some points in the anatomy of the leaf of *Welwitschia mirabilis*. Ann. Botany **27**:347–357. *pl. 29*. 1913.

[41] TAKEDA, H., A theory of "transfusion tissue." Ann. Botany **27**:359–363. 1913.

[42] WILLISTON, RUTH, Bull. Torr. Bot. Club **39**:329–339. *figs. 37*. 1912.